

with osmic-acid solution Schmidt became convinced that fine fibrillæ form a part of the structure of the medullary sheath, inasmuch as the cylindro-conical segments consist of a number of sub-segments, representing a system of loops. Each sub-segment resembles in form a hollow cone, or a funnel, placed with its narrow end or apex into the base or trumpet-like opening of the following segment, and receiving on the other side its preceding neighbor. While the margins of the bases of the fibrillar funnels are in contact with the inner surface of the external sheath, the margins of their narrow extremities embrace the axis-cylinder. The fibrillar loops of each individual funnel are not arranged in a parallel way, but slightly overlap each other, exhibiting an imbricated arrangement, and are imbedded in the semi-fluid part of the nerve-medulla.

Schmidt comes to the conclusion that the nervous current cannot be strictly compared with that of static or dynamic electricity; neither does this current solely depend for its production upon a particular central apparatus, but is, very probably, also generated in the conducting elements, the nerve fibres themselves. If the fibrillæ of the medullary sheath be arranged in the form of closed systems, the nerve-force, produced by the molecular changes accompanying the process of nutrition, might circulate through these systems in the form of circuits, increasing the main nervous current in strength by way of induction. C. HEITZMANN.

**The Pathological Histology of the Spinal Cord.** By S. G. WEBBER, M.D. Medical and Surgical Reports of the City Hospital of the City of Boston. Third series. Boston, 1882.

The author dwells first upon the normal histology of the spinal cord, giving credit to the observers, who have advanced our knowledge on this subject, being thoroughly based on the cell-doctrine. The great discrepancy of the views concerning the cells is most striking in the chapters entitled "Other Cells" and "Granular Corpuscles," both of pathological significance. In describing a pathological cavity, confined chiefly to the posterior columns, he says: "The walls were formed of fibres and cells. The fibres were broad and coarse, several times thicker than the normal neuroglia fibres. Near the cavity these fibres were interspersed with cells, forming a narrow and firm lining membrane; externally the fibres were more loosely woven together, with fewer cells and many granular corpuscles," etc. What is the difference, may we ask, between cells and granular corpuscles?

As the result of his careful examinations of inflamed spinal cords, the author sums up the following :

1. *Acute interstitial myelitis*, with swelling of the fibres, nuclei, and cells of the neuroglia, with destruction of the nerve fibres and nerve cells, leading to softening.

2. *Acute parenchymatous myelitis*, where the nerve fibres in the white substance are primarily or chiefly affected, myeline and axis cylinders both disappearing, but the interstitial tissue remaining, seemingly not much changed ; also cases in which the nerve cells are chiefly affected, especially those of the anterior cornua, the nuclei and cells of the neuroglia being almost entirely exempt from change, as in infantile paralysis and allied affections.

3. *Chronic interstitial myelitis*, affecting the neuroglia, fibres, nuclei, and cells in both white and gray substance, the nerve fibres and cells being affected only secondarily, as in sclerosis.

4. *Chronic parenchymatous myelitis*, in the white columns only, locomotor ataxia, or lesion of the posterior columns (and secondary ascending and descending degeneration, possibly), is as yet well known ; lateral sclerosis probably belongs to this variety. In the gray substance the cells are affected as in progressive muscular atrophy. This subdivision of myelitis, taken from the nomenclature of interstitial and parenchymatous nephritis, seems to be well worthy of attention.

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**Contributions to Physiology.** By ISAAC OTT, M.D. Part V. Easton, Pa., 1883.

This small volume contains not less than seven original articles, whose titles are as follows : 1. Rattlesnake Venom ; 2. Copperhead Venom ; 3. Vibration of Rattlesnake's Tail ; 4. Vaso-motor, Sudorific, and Sensory Fibres in the Spinal Cord ; 5. Physiological Action of Astragalus Moll. ; 6. Action of Drugs on Plant Growth ; 7. Physiological Action of Convallaria Majalis. Every article gives in a short, spicy way some physiological fact worthy of notice. Most of the articles have previously appeared in this JOURNAL.

C. HEITZMANN.

1. **The Systematic Treatment of Nerve Prostration and Hysteria.** By W. S. PLAYFAIR, M.D. Pp. 111. Philadelphia : Henry C. Lea's Sons, 1883.

2. **Fat and Blood. An Essay on the Treatment of Certain Forms of Neurasthenia and Hysteria.** By S. Wier Mitchell, M.D. Pp. 162. Third edition. Revised with additions.